



भारत सरकार/Government of India
विद्युत मंत्रालय/Ministry of Power
केन्द्रीय विद्युत प्राधिकरण/Central Electricity Authority
एन.पी.सी. प्रभाग/National Power Committee Division
1st Floor, Wing-5, West Block-II, RK Puram, New Delhi-66

सं./MTGS/SG/NPC/CEA/2023/208

दिनांक: 08.07.2024

सेवा में/ To

(As per distribution list)

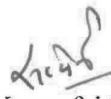
विषय: Revised Standard Operating Procedures (SOPs) for Third Party Protection System Audit, Grid Disturbances/Grid Incidents/Tripping's, and Communication audit for Substations, and Communication System Outage Planning- reg.

Madam/Sir,

As per the 14th NPC meeting held on 03.02.2024, the following Standard Operating Procedures (SOPs) are revised and attached herewith for your kind information and necessary action, please:

1. Third Party Protection System Audit.
2. Grid Disturbances/Grid Incidents/Tripping's.
3. Communication audit for Substations.
4. Communication System Outage Planning.

Encl: As above


08.07.24

Yours faithfully,
(सत्येंद्र कु. दोतान / Satyendra Kr. Dotan)
Director, NPC

Distribution List

1. SE/EE from RPCs of concerned subgroup of NPC (Protection/ Communication)

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4.

Revised Final Standard Operating Procedure (SoP) for Communication System Outage Planning

1. As per the following CEA and CERC Regulations, the Communication Outage for the Region shall be carried out by RPC Secretariat:

- a) Regulation 7.3 of Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 stipulates as below:

Quote:

7.3 Role of National Power Committee (NPC) and Regional Power Committee (RPC):

-
- (iv) *The RPC Secretariat shall be responsible for outage planning for communication system in its region. RPC Secretariat shall process outage planning such that uninterrupted communication system is ensured.*
-

Unquote

- b) Regulation 10 Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 notified on 27.02.2020 envisages as below:

Quote:

10. Outage Planning: Monthly outage shall be planned and got approved by the owner of communication equipment in the concerned regional power committee, as per detailed procedure finalized by the respective regional power committee.

Unquote

2. A Communication System Outage Planning Sub-Group/ TeST Sub Committee shall be formed in each region constituting the members from all the entities connected to ISTS including all CGS, ISGS, REGs/SPPDs/SPDs, STUs, SLDCs etc., of the respective Region, RLDC/Grid-India, PGCIL, CTUIL, Private Transmission licensees in respective region & RPC secretariat. The sub-group/ Sub Committee may co-opt any other member from any organization for facilitating the activities of the sub-group/ Sub Committee.

3. Communication System Outage Planning will be limited to the following systems:

- (i) ISTS Communication System including ISGS
 - (ii) Intra-state Communication System being utilized for ISTS Communication
 - (iii) ICCP links between Main & Backup RLDCs, Main & Backup SLDCs & Main & Backup NLDCs.
 - (iv) Inter-regional AGC links.

- (v) Any other system agreed by the sub-group.
4. Communication Equipment/link within the scope of the Procedure would include :
- (i) Optic Fibre links
 - (ii) Any other link being used for ISTS communication
 - (iii) ICCP links between Main & Backup RLDCs, Main & Backup SLDCs & Main & Backup NLDC
 - (iv) VC links between LDCs
 - (v) Inter-regional AGC links
 - (vi) SPS Links
 - (vii) Tele-Protection
 - (viii) AMR
 - (ix) PMU
 - (x) SDH & PDH
 - (xi) DCPC
 - (xii) RTU & its CMU cards
 - (xiii) DTPCs
 - (xiv) Battery Banks and Charging Equipment
 - (xv) EPABX
 - (xvi) Any other equipment/link agreed by the sub-group
5. A Web Portal named as “Communication System Outage Planning Portal” shall be developed by respective RLDCs or a module for communication system outage planning shall be provided in the U-NMS. Log-in credentials shall be provided to all the ISTS connected entities/concerned entities.
6. Entities/Users/Owners shall add their communication links and the equipment to the Web Portal as soon as they are commissioned. The same has to be furnished to RPC Secretariat /RLDCs.
7. Entities/Users/Owners of the communication equipment shall upload the outage proposals of communication links and the equipment (in the prescribed format only) to be availed during subsequent month by 7th/8th of every month in the Web Portal.
8. RPC Secretariat consolidates the list of outage proposals received from various Entities/Users/Owners of the communication links and equipment by downloading from the Web portal and circulate the same among all the respective region entities by 15th of every month. Communication outages affecting other regions would be coordinated by respective RLDC through NLDC.
9. Communication System Outage Planning (CSOP) meeting shall be conducted during the third week of every month normally (preferably through VC) to discuss and approve the proposed outages of communication links and equipment.
10. The approved outages of Communication links and equipment in the CSOP meeting shall be published in the RPC website and respective RPCs Communication Outage Portal within 3 days from the date of CSOP meeting.

11. Outage of the approved communication links and equipment shall be availed by the respective owner /entities after confirming the same with RLDC on D-3 basis.
12. In case of any emergency outage requirement of communication links and equipment, Entities/Users/Owners may directly apply to respective RLDC with intimation to respective RPCs on D-2 basis. Confirmation of approval/rejection will be provided on D-1 basis by RLDCs in consultation with respective RPCs considering 24hrs processing window.
13. Entities/Users/Owners shall take the code from the respective RLDC before availing the planned outage of the communication links & equipment and before restoration of the same.
14. Entities/Users/Owners of the communication links and equipment shall submit the deviation report for the approved outages (approved dates & approved period) availed during the previous month and the report on planned / forced / other outage of communication links / equipment by 10th of the month to RPC Secretariat as per the format at **Annexure-I** .
15. In the monthly CSOP meetings, communication links and equipment whose outage duration (Planned / Forced / Others) more than 48 hours for the last 12 months of rolling period shall be deliberated for the measures to be taken in future for the better outage management. The date deviations and non-availing the outages that were approved in the previous CSOP meetings shall also be deliberated in the CSOP meetings.

Note: The manual for implementation of Communication System Outage Planning through web portal received from SRPC is attached at **Annexure-II** for ready reference.

Outage Deviation Report : List of outages of Communication Links, availed / deviated during the month of June, 2021

Dated :

A Details of Communication Links (Point to Point) availed :

[illegible]

Annexure: DCOA-II

Dated : **0:00**

B Details of Communication Equipment availed :

[illegible]

COMSR

MANUAL - 2023



PREPARED BY
SRLDC, GRID-INDIA

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1. Need for Communication Outage Portal?

In line with the requirements for outage planning of communication equipment as per CERC Communication System for Inter State Transmission of Electricity Regulations 2017, SRPC has devised a procedure for Outage planning for Communication system in Southern Region available at the website of Southern Regional Power Committee (SRPC) (https://www.srpc.kar.nic.in/website/2020/communication/com_outg_proc.pdf) and attached as **Annex-I**. As per the "Procedure on Outage Planning for Communication System -SR", monthly meetings are being conducted with participation of Nodal Officers from users, SLDCs, SRLDC, SRPC & CTU. These meetings are conducted to discuss and approve/reschedule / dispose of the proposed list of outages pertaining to communication links / equipment scheduled for the next month. In order to provide a seamless experience for applying and availing communication outages and monitoring availed outage timelines, SRLDC has developed a web portal which is used to register communication equipment/links, configure outage proposals for already registered equipment/links, view deviations between approved outage timelines and actual outage timelines .The web portal facilitates entering observations/remarks by RLDC/RPC on any outage proposal with the facility to concur/deny the proposal by SRPC.

2. COMSR (Communication Equipment Outage Coordination Meeting - SR) Outage Portal:

The web portal is accessible through the following URL: <https://srcom.srldc.in/login>

2.1. Login Page:

Communication Outage Portal

SRLDC Communication Outage Portal



Username

Username

Password

Password

☐ I'm not a robot


reCAPTCHA
Privacy - Terms

Login

Figure 1 COMSR Portal Login Page

- User name & initial password are created and shared by web admin (SRLDC).
- Note: Password Change can be enforced after first time login.

2.2. Roles defined in the Communication outage portal

1. **Administrator (RPC)**
2. **Supervisor (RLDC)**
3. **User**
4. **Operator**

The administrator role is assigned to the respective RPC. Supervisor Role is assigned to the respective RLDC. User Role is assigned to each entity/utility, who can apply for outages. Operator Role is assigned to real time shift operators at RLDC.

- Only Administrator can approve/deny the proposed outages. Supervisor can provide remarks against each proposed outage and do necessary configuration and maintenance of web-portal front end and Db for smooth functioning of the entire process.
- Operator can view the portal for list of approved outages and issue codes for availing outages
- User can apply for the outages proposed for the next month and once the outage is approved, the respective user can view the approval details under their account login. User can also apply for emergency outages. User can also update the actual time duration (Start time, End time) of each outage availed.

2.3. Main Tabs in COMSR Portal:

- **Meetings**
- **Links**
- **Equipment**
- **COA1(Link)** - Communication Outage Approval for Communication Links
- **COD1(Link)** - Communication Outage Deviation for Communication Links
- **COA2(Equipment)**- Communication Outage Approval for Communication Equipment
- **COD2(Equipment)** - Communication Outage Deviation for Communication Equipment
- **Rolling Report- 12 Months Outage Time > 48hours**
 - **COD3- Communication Outage Rolling 12 Months Deviation – Links**
 - **COD4-Communication Outage Rolling 12 Months Deviation - Equipment**

Note:

1. Formats for COA1, COA2, COD1, COD2, COD3 & COD4 have been finalized by SRPC.
2. All Reports can be downloaded from the web portal in Excel Format

2.4. Meetings Tab

Figure 2 below shows the Meeting summary Page, where details for upcoming monthly meeting can be configured with a unique meeting number for each meeting. The details configured include opening and closing dates for receipt of applications for

communication links/equipment outages proposed for next month (M+1month outages proposed in timelines defined in Mth month).

Showing 34 Meetings in Database

[New Meeting](#)

COMSR Date	COMSR Number	Opening Date	Closing Date	Shutdown Min Date	Shutdown Max Date	
2023-09-20	COMSR-38	2023-09-01	2023-09-12	2023-10-01	2023-10-31	Edit
2023-08-29	COMSR-37	2023-08-03	2023-08-15	2023-09-01	2023-09-30	Edit
2023-07-26	COMSR-36	2023-07-04	2023-07-12	2023-08-01	2023-08-31	Edit
2023-06-27	COMSR-35	2023-06-01	2023-06-12	2023-07-01	2023-07-31	Edit
2023-05-23	COMSR-34	2023-05-01	2023-05-12	2023-06-01	2023-06-30	Edit
2023-04-25	COMSR-33	2023-04-01	2023-04-12	2023-05-01	2023-05-31	Edit
2023-03-24	COMSR-32	2023-03-01	2023-03-12	2023-04-01	2023-04-30	Edit
2023-02-24	COMSR-31	2023-02-01	2023-02-12	2023-03-01	2023-03-31	Edit
2023-01-23	COMSR-30	2023-01-01	2023-01-12	2023-02-01	2023-02-28	Edit
2022-12-23	COMSR-29	2022-12-01	2022-12-12	2023-01-01	2023-01-31	Edit

Figure 2 Meeting summary Page

A sample meeting creation page screen is shown in Figure 3 below:

Meeting [X]

COMSR [Calendar Icon]

Request Opening [Calendar Icon] Request Closing [Calendar Icon]

Shutdown Min [Calendar Icon] Shutdown Max [Calendar Icon]

SAVE MEETING

Figure 3 New Meeting Creation Page

All options available on this webpage are customisable and presently the meeting creation option is automated with default Opening and Closing dates for proposed outages as 1st and 12th of the current month.

2.5. Work Flow for availing communication outages:

RPC (Administrator Login) configures the upcoming COMSR Meeting details in the web portal through manual/automated mode and intimation for the next meeting is sent to all stakeholders through e-mail.

2.5.1. Planned Outages:

- ▶ User can apply planned outages for the M+1 month by furnishing various details during current month (M) window (planned outages to be submitted between defined timelines---*opening and closing date* as shown in Figure 3 above) and the applied outage details intimation are sent automatically through mail to RLDC and RPC by the portal itself.
- ▶ User can edit their applied outages till end of *closing date* of requests for M+1 Month.
- ▶ RLDC can provide observations for the proposed outages.
- ▶ RPC consolidates the list of outage proposals received from various Users/Owners and releases the list around mid of the Mth month for outages proposed for M +1 month.
- ▶ On the meeting date, the proposed outages are deliberated, and RPC approves, revises or rejects the applied outages as per the outcome of discussions.
- ▶ Facility has been provided in the portal for RPC to change/defer (approval/rejection) of approved requests till D-1 day (D being the day of availing outage).
- ▶ User need to intimate RLDC about availing approved outages(confirmation) before D-3 through email (D being the date of availing outage).
- ▶ A consolidated view of day-wise approved outages is available under Operator Login. The facility has been made available to enable Grid Operators to issue unique codes to the concerned user seeking equipment/link outage on the day of outage.

Detailed flowcharts covering activities involved in creating a meeting instance on web portal, entering of planned outages by Users, provision for entering review/observations by RLDC/RPCs, discussions on proposed outages in monthly meeting, approval/denial of proposed outages, availing of outages on the proposed dates, computing deviations between actual outage timeline with proposed timeline and preparation of Rolling Window for outages for last 12 months are depicted in figures 4 and 5 below.

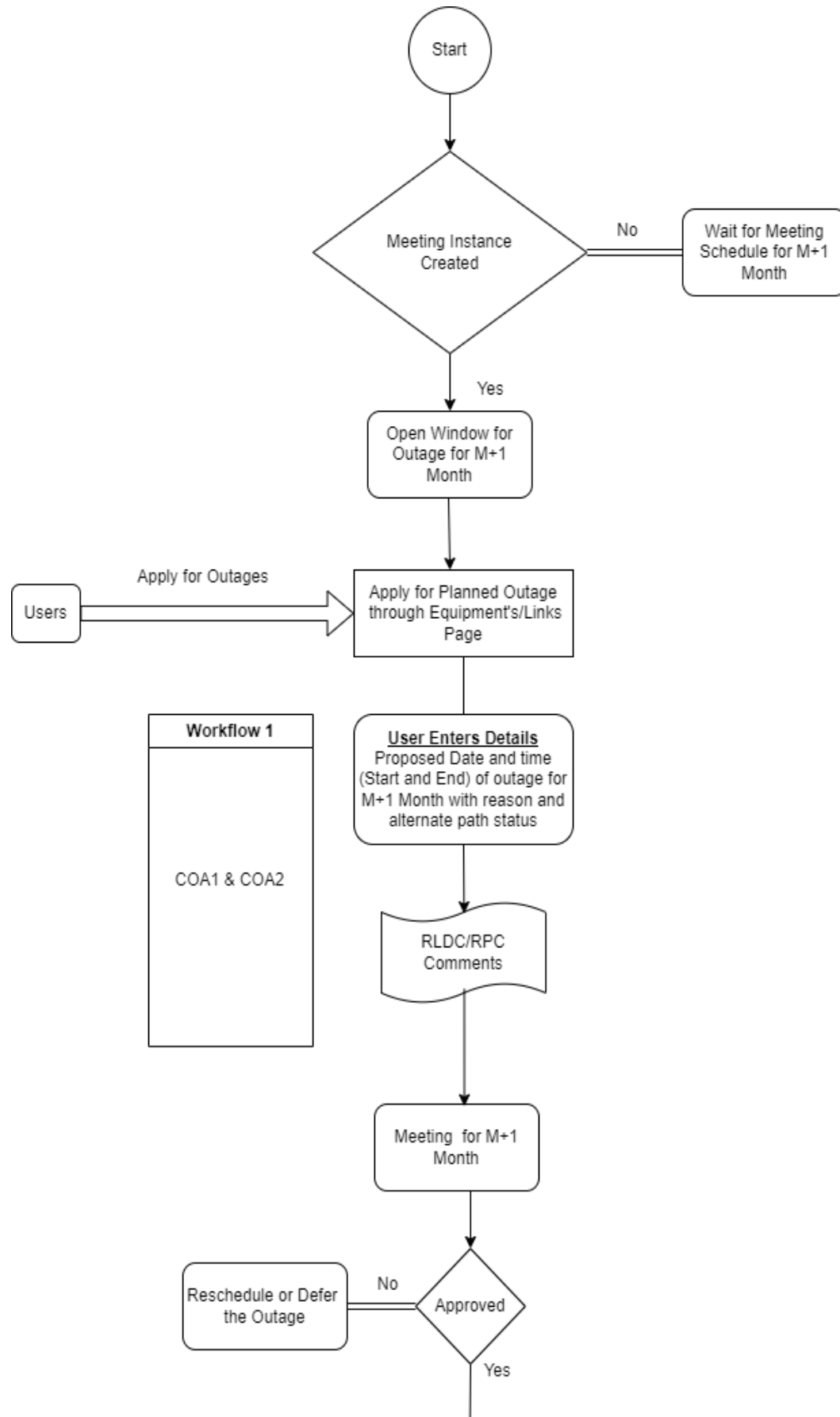


Figure 4 Flowchart for Planned Outage processing through web portal

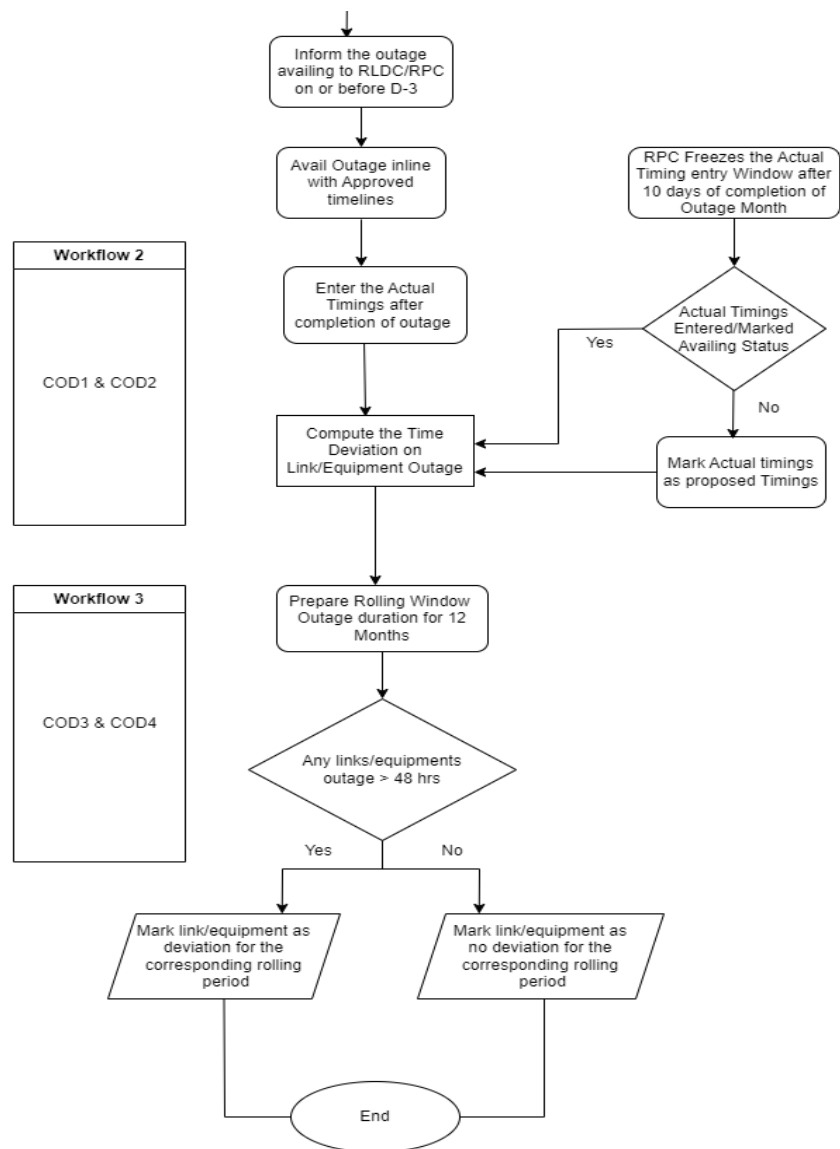


Figure 5 Flowchart for availing approved outages and entering deviations between approved/actual outage timelines through web portal

2.5.2. Emergency & Forced Outages:

- ▶ User can apply Emergency outages for D Day on D-1 Day i.e 1 Day before the proposed outage. The details of applied Emergency Outage will be sent to registered email ids of RLDC and RPC for concurrence.
- ▶ User can submit details for Forced outages availed for links/equipment in previous Month (M-1) till 12th of the current Month(M). The details of reported Forced Outages will be sent to registered email ids of RLDC and RPC.

Flowchart covering various activities involved in application and approval of emergency outages is depicted in Figure 6 below.

Flowchart covering various activities involved in reporting of forced outages and its inclusion in 12 months rolling report is depicted in Figure 7 below.

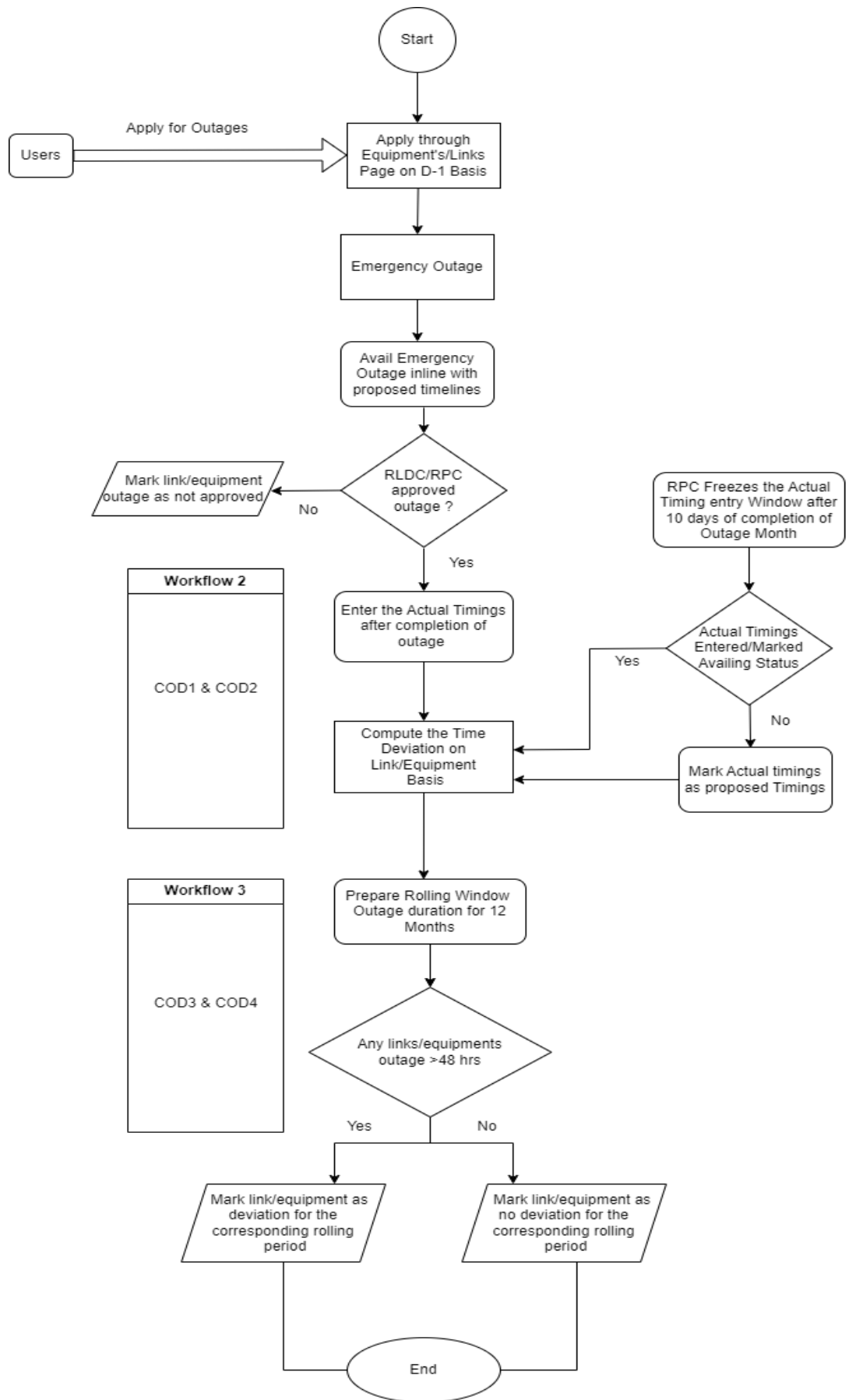


Figure 6 Emergency Outage Workflow

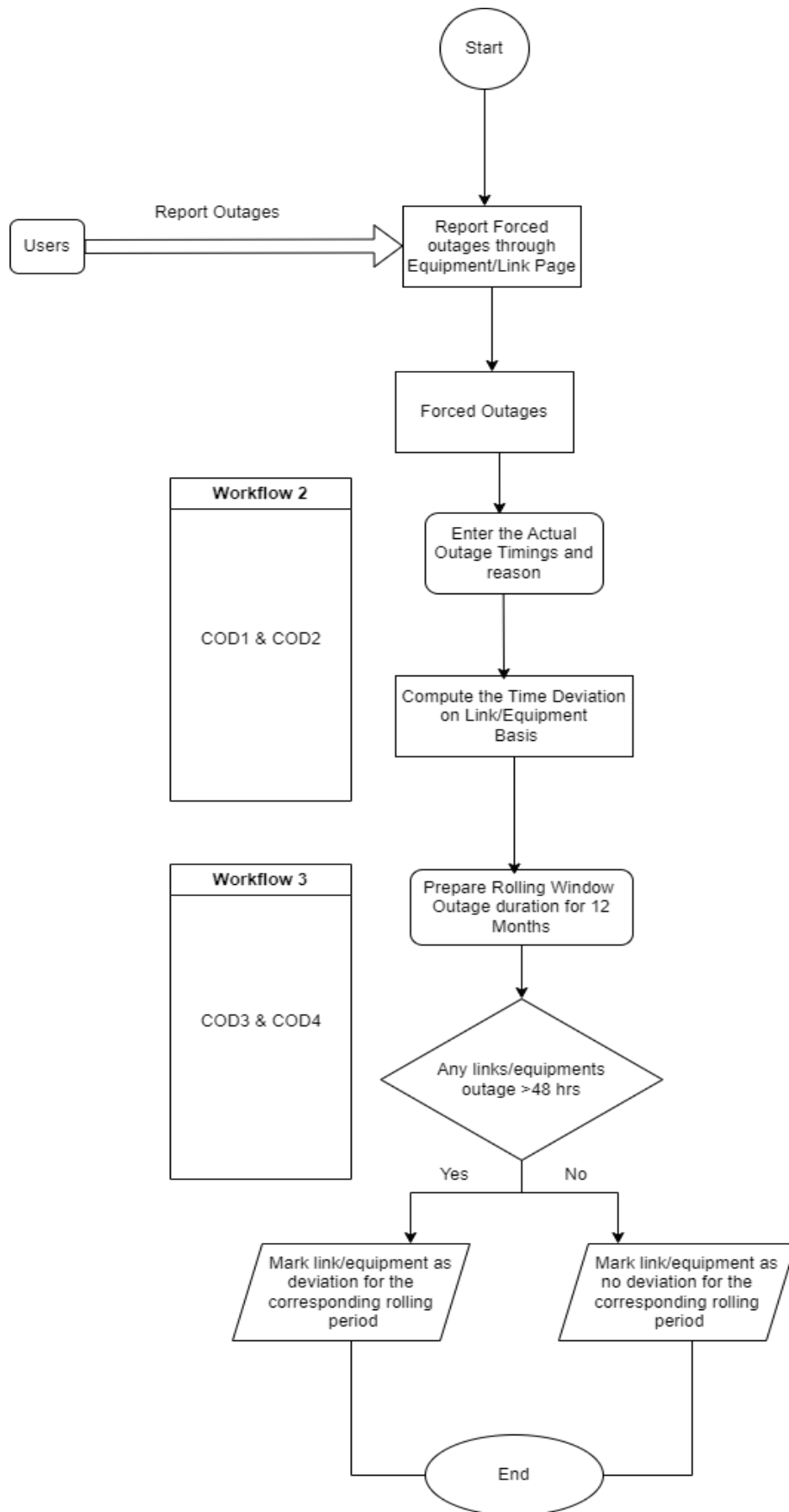


Figure 7 Forced Outage Workflow

2.6. Adding new/modified Equipment/Link to the portal database:

- Under the **Equipment** Tab, provision is there for User to add new/modified equipment details and request RPC/RLDC for addition/updating of the equipment in COMSR Database through "Request to Add new Equipment to Database option". Screenshot of the "Create New Equipment" widget is shown in Figure 8 below.

The screenshot shows the 'Create New Equipment' form within the 'Communication Outage Portal'. The form has a blue header bar with the text 'Communication Outage Portal'. Below the header, there is a light blue button labeled 'Create New Equipment'. The form contains four input fields: 'Description', 'Location', 'Ownership', and a 'Save' button. The 'Ownership' field is a dropdown menu.

Figure 8 Create new Equipment Request screen

Similarly, any new/modified Communication Channel (links) can be added through the **Links** Tab by User and User can further request RPC/RLDC for approval of addition of the same in Communication outage portal database, Screenshot of the "Create New Link" widget is shown in Figure 9 below.

The screenshot shows the 'Create New Link' form within the 'Communication Outage Portal'. The form has a blue header bar with the text 'Communication Outage Portal'. Below the header, there is a light blue button labeled 'Create New Link'. The form contains seven input fields: 'Description', 'Source', 'Destination', 'channelRouting', 'Ownership', 'Link Type', 'Channel Type', and a 'Save' button. The 'Ownership', 'Link Type', 'Channel Type', and 'Path Type' fields are dropdown menus.

Figure 9 Create the communication Channel screen

Workflow depicting activities involved in adding new/modified Equipment/Link to the portal database is depicted below (Figure 10).

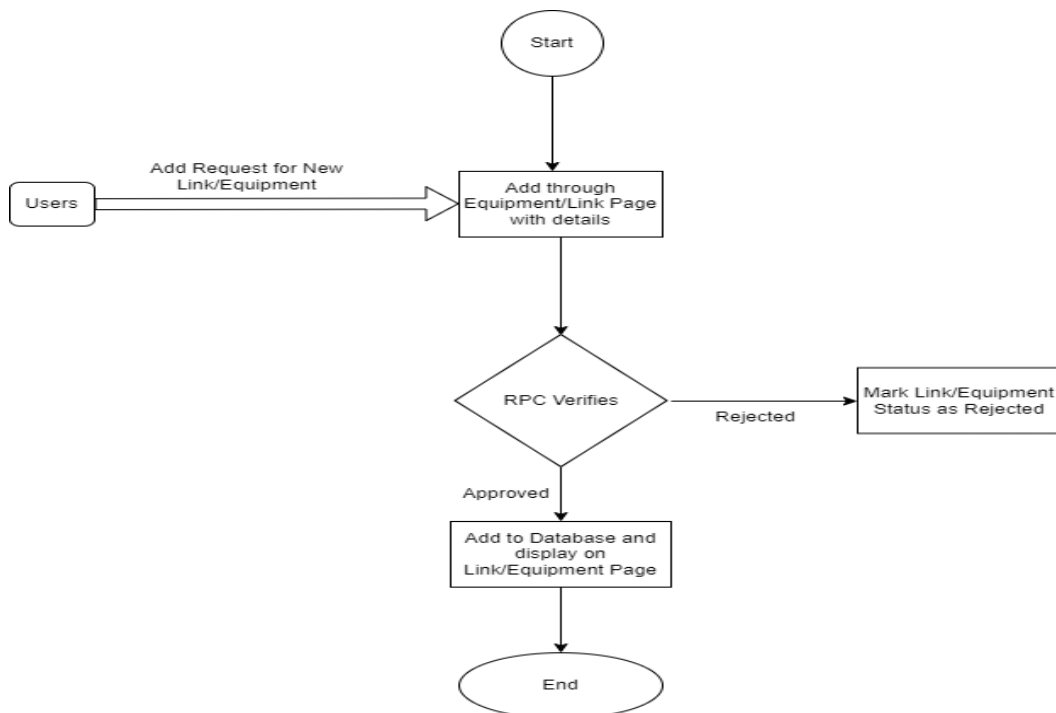


Figure 10 Adding New Links/Equipment's Workflow

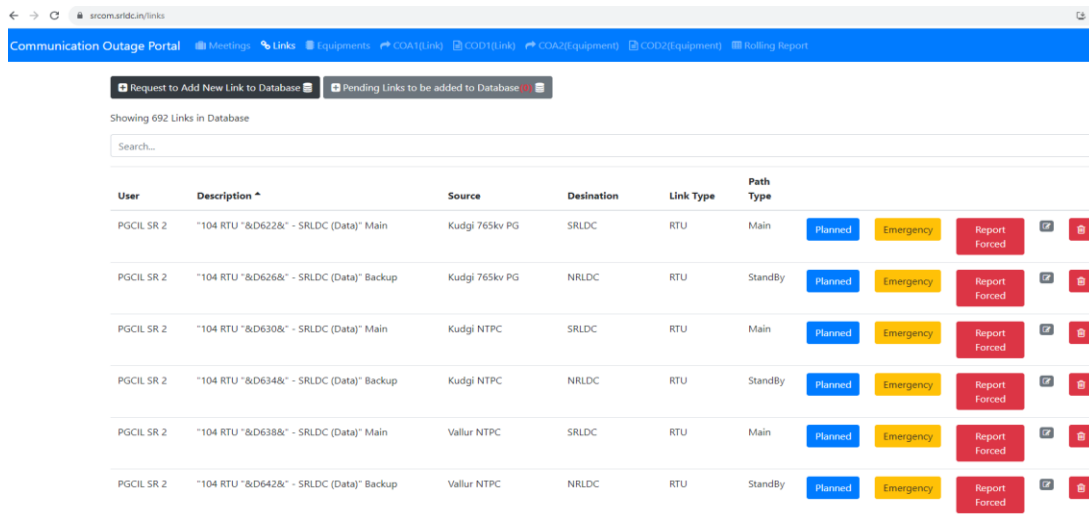
Once a user requests for the addition/modification of the communication equipment or links, the request is forwarded to RPC for approval. Screenshot of widget showing the pending equipment/link approval of respective RPC/RLDC sample view is shown in Figure 11 below.

Communication Outage Portal Meetings Links Equipments COA1(Link) COD1(Link) COA2(Equipment) COD2(Equipment) Rolling Report SR						
Showing 5 equipments in Database						
Search...						
Description ^	Location	ownership				
Battery-1, (M/s Exide,Power safe,200AH SMF(1+0))	T.Narasapuram 132KVSS	APTRANSCO	✓	✗	?	
Battery-2, (M/s Exide,Power safe,200AH SMF(1+0))	T.Narasapuram 132KVSS	APTRANSCO	✓	✗	?	
Charger -1, (M/s Green Secure Energy sys, 48V/35A(1+0))	T.Narasapuram 132KVSS	APTRANSCO	✓	✗	?	
Charger -2, (M/s Green Secure Energy sys, 48V/35A(1+0))	T.Narasapuram 132KVSS	APTRANSCO	✓	✗	?	
PLCC Terminal, (M/s Puncom, PL-9500, S/c)	T.Narasapuram 132KVSS	APTRANSCO	✓	✗	?	

Figure 11 Pending Approval Widget for equipment's

- RPC/RLDC can add/update the Communication outage portal database with equipment/links proposed by users through **Equipment** tab on the web portal which contains a widget for **Pending Equipment to be added to Database** or through **Links** tab on the web portal with a widget for **Pending Links to be added to Database**.

2.7. Links Tab



Communication Outage Portal

Request to Add New Link to Database Pending Links to be added to Database

Showing 692 Links in Database

Search...

User	Description *	Source	Destination	Link Type	Path Type	Planned	Emergency	Report Forced	?	
PGCIL SR 2	"104 RTU "&D622&" - SRLDC (Data)" Main	Kudgi 765kv PG	SRLDC	RTU	Main	Planned	Emergency	Report Forced	?	
PGCIL SR 2	"104 RTU "&D626&" - SRLDC (Data)" Backup	Kudgi 765kv PG	NRLDC	RTU	StandBy	Planned	Emergency	Report Forced	?	
PGCIL SR 2	"104 RTU "&D630&" - SRLDC (Data)" Main	Kudgi NTPC	SRLDC	RTU	Main	Planned	Emergency	Report Forced	?	
PGCIL SR 2	"104 RTU "&D634&" - SRLDC (Data)" Backup	Kudgi NTPC	NRLDC	RTU	StandBy	Planned	Emergency	Report Forced	?	
PGCIL SR 2	"104 RTU "&D638&" - SRLDC (Data)" Main	Vallur NTPC	SRLDC	RTU	Main	Planned	Emergency	Report Forced	?	
PGCIL SR 2	"104 RTU "&D642&" - SRLDC (Data)" Backup	Vallur NTPC	NRLDC	RTU	StandBy	Planned	Emergency	Report Forced	?	

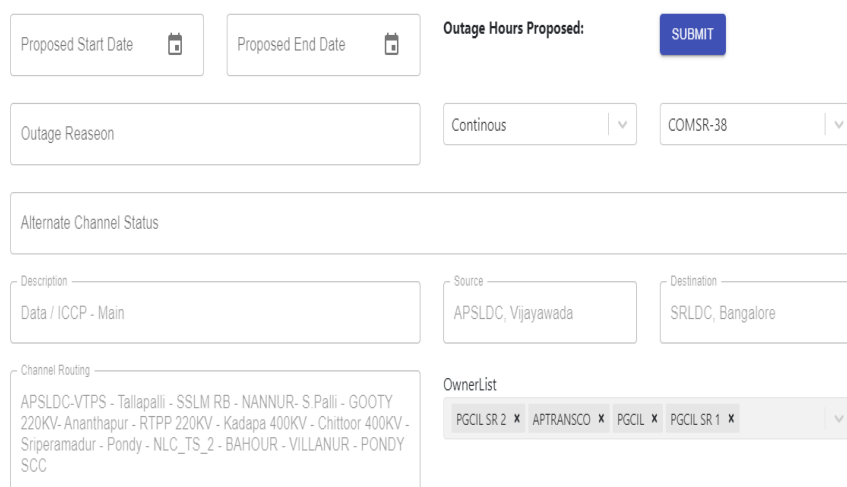
Figure 12 Links Tab sample screen

From **Links** tab, user can apply for proposed outages in communication links in either planned or emergency category and can also report the forced outages availed.

Sample View page screens for entering planned, emergency or forced outage details for communication equipment by the User are shown below in Figures 13,14 and 15 respectively.

2.7.1. Planned Outage Application for Links:

Planned



Proposed Start Date Proposed End Date Outage Hours Proposed: SUBMIT

Outage Reason Continuous COMSR-38

Alternate Channel Status

Description Data / ICCP - Main Source APSLDC, Vijayawada Destination SRLDC, Bangalore

Channel Routing APSLDC-VTPS - Tallapalli - SSLM RB - NANNUR- S.Palli - GOOTY 220KV- Ananthapur - RTPP 220KV - Kadapa 400KV - Chittoor 400KV - Sniperamadur - Pondy - NLC_TS_2 - BAHOUR - VILLANUR - PONDY SCC

OwnerList PGCIL SR 2 x APTRANSCO x PGCIL x PGCIL SR 1 x

Figure 13 Planned Outage Application Screen for Links

2.7.2. Emergency Outage Application for Links:

Emergency

Proposed Start Date 	Proposed End Date 	Outage Hours Proposed:	SUBMIT
Outage Reason		Continuous 	
Alternate Channel Status			
Description Data / ICCP - Main	Source APSLDC, Vijayawada	Destination SRLDC, Bangalore	
Channel Routing APSLDC-VTPS - Tallapalli - SSLM RB - NANNUR- S.Palli - GOOTY 220KV- Ananthapur - RTPP 220KV - Kadapa 400KV - Chittoor 400KV - Sriperamadur - Pondy - NLC_TS_2 - BAHOUR - VILLANUR - PONDY SCC		OwnerList PGCIL SR 2  APTRANSCO  PGCIL  PGCIL SR 1  	

Figure 14 Emergency Outage Application Screen for Links

2.7.3. Forced Outage Reporting for Links:

Forced

Outage Start Date 	Outage End Date 	Outage Hours Reported:	SUBMIT
Outage Reason			
Alternate Channel Status			
Description Data / ICCP - Main	Source APSLDC, Vijayawada	Destination SRLDC, Bangalore	
Channel Routing APSLDC-VTPS - Tallapalli - SSLM RB - NANNUR- S.Palli - GOOTY 220KV- Ananthapur - RTPP 220KV - Kadapa 400KV - Chittoor 400KV - Sriperamadur - Pondy - NLC_TS_2 - BAHOUR - VILLANUR - PONDY SCC		OwnerList PGCIL SR 2  APTRANSCO  PGCIL  PGCIL SR 1  	

Figure 15 Forced Outage Reporting Screen for Links

2.8. Equipment Tab

Communication Outage Portal | Meetings | Links | **Equipments** | COA1(Link) | COD1(Link) | COA2(Equipment) | COD2(Equipment) | Rolling Report

Request to Add New Equipment to Database | Pending Equipments to be added to Database

Showing 1453 Equipments in Database

Search...

Owner	Description ^	Location					
SRLLC	48V DC 50A Charger-1, Make: Designs and prototypes, Madras.	KAIGA, Switchyard	Planned	Emergency	Report Forced	✓	✕
SRLLC	48V DC 50A Charger-2, Make: Designs and prototypes, Madras.	KAIGA, Switchyard	Planned	Emergency	Report Forced	✓	✕
PGCIL SR 1	SDH TEJAS TJ1400 (Control, optical cards etc)	Ravipadu Repeater Station(Nagarjunsagar-Kadapa Link)	Planned	Emergency	Report Forced	✓	✕
PGCIL SR 2	101 RTU gateway	Tiruvallam	Planned	Emergency	Report Forced	✓	✕
PGCIL SR 2	104 RTU-1 main at Somanahalli	somanahalli	Planned	Emergency	Report Forced	✓	✕
PGCIL SR 2	104 RTU-2 standby at Somanahalli	somanahalli	Planned	Emergency	Report Forced	✓	✕

Figure 16 Equipment Tab sample screen

From **Equipment** tab (Figure 16 above), user can apply for proposed outages in communication equipment in either planned or emergency category and can report the forced outage available. Sample View page screens for entering planned, emergency or forced outage details for communication equipment by the User are shown below in Figures 17,18 and 19 respectively.

2.8.1. Planned Outage Application for Equipment:

Planned

Proposed Start Date Proposed End Date Outage Hours Proposed:

Outage Reason: Continuous COMSR-38

Links which will be affected during the Outage

Alternate Channel / Path available(Furnish details)

Description: 48V Charger, (DUBAS, 48V/100A (1+1)) Location: 220KV SS Yerraguntla

OwnerList: APTRANSCO

Figure 17 Planned Outage Application Screen for Equipment

2.8.2. Emergency Outage Application for Equipment:

Emergency

Proposed Start Date

Proposed End Date

Outage Hours Proposed:

SUBMIT

Outage Reason

Continuous

Links which will be affected during the Outage

Alternate Channel / Path available(Furnish details)

Description
48V Charger, (DUBAS, 48V/100A (1+1))

Location
220KV SS Yerraguntla

OwnerList
APTRANSCO

Figure 18 Emergency Outage Application Screen for Equipment

2.8.3. Forced Outage Reporting for Equipment:

Forced

Outage Start Date

Outage End Date

Outage Hours Reported:

SUBMIT

Outage Reason

Links which will be affected during the Outage

Alternate Channel / Path available(Furnish details)

Description
48V Charger, (DUBAS, 48V/100A (1+1))

Location
220KV SS Yerraguntla

OwnerList
APTRANSCO

Figure 19 Forced Outage Reporting screen for Equipment

2.9. COA1(Link) - Communication Outage Approval Links

Communication Outage Portal **COA1(Link)**

APTRANSCO

Aug, 2023

Download COA1 Applications

Showing 3 Outage Requests in Database

Search...

Requester	Source	Destination	Description ^	Reason & Precautions	Proposed StartDate	Proposed EndDate	Approved StartDate	Approved EndDate	Approval Status
APTRANSCO	APSLDC, Vijayawada	SRLDC, Bangalore	Data / PMU - Main	Periodical maintenance of TEJAs(REMC) SDH	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00	Approved
APTRANSCO	APSLDC, Vijayawada	SRLDC, Bangalore	Video Conference	Periodical maintenance of TEJAs (REMC)	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00	Approved
APTRANSCO	APSLDC, Vijayawada	SRLDC, Bangalore	Voice / HOT LINE - VOIP	Periodical maintenance of TEJAs(REMC)SDH	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00	Approved

Figure 20 Communication Outage Application links (COA1) details for selected month

Through COA1 tab (Figure 20 above), Users can view the consolidated list of outage requests (for communication channels) submitted by them along with the current status of each outage request i.e., whether approved/rejected/revise (along with approved

timelines). Through this tab, users can edit their outage requests within the scheduled timeline window for submission of proposed outages.

Under Admin/Supervisor logins (RPC/RLDC) COA1 tab provides a consolidated list of all outage requests (for communication channels) from all users with proposed start and end date / time along with approved start and end date/ time for each outage.

2.10. COD1(Link) - Communication Outage Deviation - Links

Once communication link outage is approved in COMSR meeting, the final approved list for outage of communication links is communicated by RPC to all stakeholders and also updated on COMSR web portal. After availing the approved outage, concerned users have to enter the actual outage times (including start and end date, time) through COD1(Links) Tab (Figure 21 below) for communication channels

Note: In case of Emergency outage, approved start and end date times shall be null.

Requester	Source	Destination	Description ^	Outage Type	Reason & Precautions	Approved StartDate	Approved EndDate	Outage StartDate	Outage EndDate	Mail	AvailStatus
APTRANSCO	APSLDC, Vijayawada	SRLDC, Bangalore	Data / PMU - Main	Planned	Periodical maintenance of TEJAs(REMC) SDH	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00		
APTRANSCO	APSLDC, Vijayawada	SRLDC, Bangalore	Video Conference	Planned	Periodical maintenance of TEJAs (REMC)	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00		
APTRANSCO	APSLDC, Vijayawada	SRLDC, Bangalore	Voice / HOT LINE - VOIP	Planned	Periodical maintenance of TEJAs(REMC)SDH	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00		

Figure 21 Communication Outage Deviation entry page for communication links (COD1)

Once the User enters the timings for actual outage duration for each approved outage, any deviation between the actual outage timing from the approved outage timing is computed and displayed in the COD1 tab. Sample screen for entry options available for Users against each approved outage under COD1 tab is shown in Figure 22 below. In case the user didn't avail the approved outage, user can select the "Not availed" option and submit the same in Communication Outage web portal. Similar Procedure is to be followed by Users for entering details of Emergency Category outages also.

Planned Outage

×

Outage Start Date 08/08/20:	Outage End Date 08/08/20:	Outage Hours Reported: 02:00	SUBMIT
Approved Start Date 08/08/20:	Approved End Date 08/08/20:	Outage Hours Approved: 02:00	
Proposed Start Date 08/08/20:	Proposed End Date 08/08/20:	Outage Hours Proposed: 02:00	

SRPC Remarks

SRLDC Remarks

NOT AVAILABLE

Outage Reason
 Periodical maintenance of TEJAs(REMC) SDH

Alternate Channel Status
 TEJAs (ULD) SDH will be in service

Description
 Data / PMU - Main

Source
 APSLDC, Vijayawada

Destination
 SRLDC, Bangalore

Channel Routing
 APSLDC-VTPS - Tallapalli - N.Sagar PG - MAHABUB NAGAR - RAICHUR STM16 - MUNIRABAD - DAVANGERE/ GUTUR - DAVANGERE/GUTUR 2 - HIRUYUR 5 MSP - NEELAMANGALA 2 - BIDADI - SMNHL 1 - SRLDC 1

OwnerList

PGCIL SR 2 ✕ APTRANSCO ✕
 PGCIL ✕ PGCIL SR 1 ✕

Figure 22 Planned Outage - actual time reporting entry screen

For reporting forced outages of communication links, user can use the “Add Forced Link Outage to COD1” Button which is located in the right corner of COD1(Links) Page (Fig. 22 above). On clicking this button, it shall navigate to Links Page where user can submit the details for the outage by selecting the respective links Sample screen for Forced Outage reporting widget is shown in Figure 23.

Forced

Outage Start Date	Outage End Date	Outage Hours Reported:	SUBMIT
Outage Reason 			
Alternate Channel Status 			
Description Data / ICCP - Main	Source APSLDC, Vijayawada	Destination SRLDC, Bangalore	
Channel Routing APSLDC-VTPS - Tallapalli - SSLM RB - NANNUR - S.Palli - GOOTY 220KV- Ananthapur - RTPP 220KV - Kadapa 400KV - Chittoor 400KV - Sriperamadur - Pandy - NLC_TS_2 - BAHOUR - VILLANUR - PONDY SCC		OwnerList PGCIL SR 2 ✕ APTRANSCO ✕ PGCIL ✕ PGCIL SR 1 ✕	

Figure 23 Forced Outage Reporting with actual outage times screen

2.11. COA2 (Equipment)- Communication Outage Approval for Equipment

Requester	Description ^	Location	Reason & Precautions	Proposed StartDate	Proposed EndDate	Approved StartDate	Approved EndDate	Approval Status
APTRANSCO	SDH (REMC), (TEJAs N/Ws, T11400)	APSLDC, Vijayawada	Periodical maintenance	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00	Approved

Figure 24 Communication Outage Application links (COA2) details for selected month

Through COA2 tab (Figure 24 above), Users can view the consolidated list of outage requests (for communication equipment) submitted by them along with the current status of each outage request i.e., whether approved/rejected/revise (along with approved durations). Through this tab, users can edit their outage requests within the scheduled timeline window for submission of proposed outages.

Through COA2 tab, RPC/RLDC can view consolidated list of all outage requests (for communication equipment) from all users with proposed start and end date / time along with approved start and end date/ time for each outage.

2.12. COD2(Equipment) - Communication Outage Deviation for Equipment

Once communication equipment outage is approved in COMSR meeting, the final approved list for outage of communication equipment is communicated by RPC to all stakeholders and also updated on COMSR web portal. After availing the approved outage, concerned users have to enter the actual outage times (including start and end date, time) through COD2(Equipment) Tab (Figure 25 below) for communication equipment.

Note: In case of Emergency outage, approved start and end date times shall be null.

Requester	Description ^	Location	Outage Type	Reason & Precautions	Approved StartDate	Approved EndDate	Outage StartDate	Outage EndDate	Mail	AvailedStatus
APTRANSCO	SDH (REMC), (TEJAs N/Ws, T11400)	APSLDC, Vijayawada	Planned	Periodical maintenance	08-Aug-2023 11:00	08-Aug-2023 13:00	08-Aug-2023 11:00	08-Aug-2023 13:00		

Figure 25 Communication Outage Deviation entry page for communication Equipment (COD2)

Once the User enters the timings for actual outage duration for each approved outage, any deviation between the actual outage timing from the approved outage timing is computed and displayed in the COD2 tab. The sample screen for entry options available for Users against each approved outage under COD2 tab is shown in Figure 26 below.

In case the user didn't avail the approved outage, the user can select the "Not Availed option" and submit the same in COMSR web portal. Similar Procedure is to be followed by Users for entering details of Emergency Category outages also.

Planned Outage

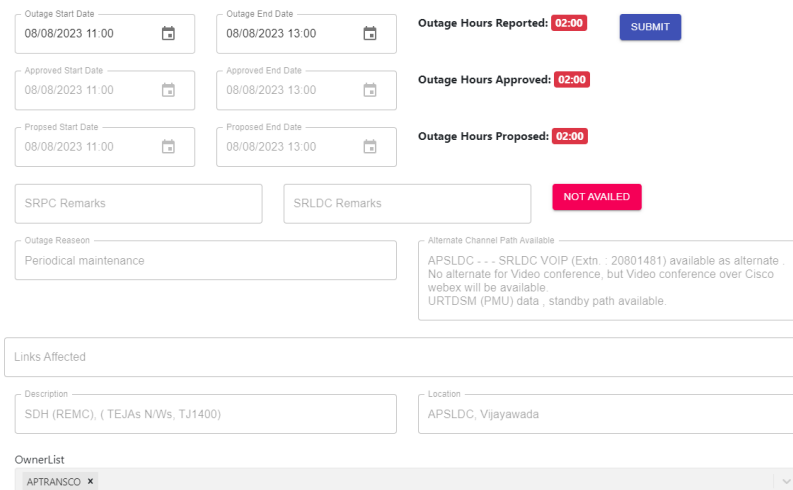


Figure 26 Planned Outage (Equipment) - actual time reporting entry screen

For reporting forced outages of communication equipment, user can use the "Add Forced Link Outage to COD2" Button located in the right corner of COD2(Equipment's) Page (Fig. 27 below). On clicking this button, it shall navigate to Equipment Page where user can submit the details for the respective Forced Outage.

Forced

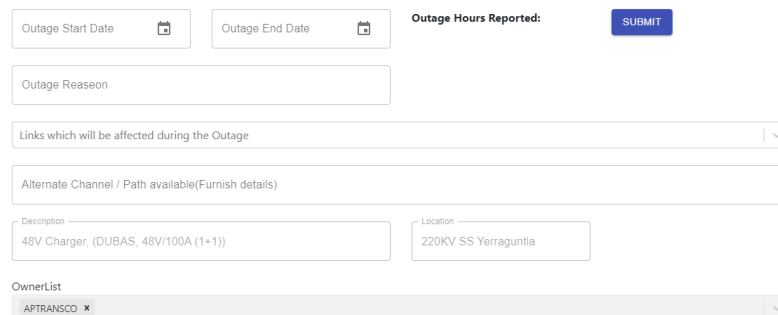


Figure 27 Forced Outage (Equipment's) Reporting with actual outage times screen

As per the approved Outage Procedure, all users/owners of communication equipment's/links need to submit the deviation report for outages availed by them in the M-1 month (considering M as current month) by 10th of the Mth Month. This requirement has been facilitated through the COD1(Links) & COD2(Equipment) tabs in the Communication Outage web portal.

Once this COD1 (links) & COD2 (equipment) is filled by respective Users/owners, RPC freezes the COD1& COD 2-page entry option after 10th of Mth month for outages availed in M-1 Month using "Freeze COD Application button" (Figure 28 and 29 below), available under Admin role login. In cases wherein the user has not entered the actual outage

timelines of approved outages, the portal automatically takes the approved outage timelines as actual outage timelines for planned outages. In case of emergency outages, if the user doesn't enter the actual outage timelines for the outage availed, the portal automatically takes proposed outage timings as actual outage timings. In all such cases, wherein User doesn't enter the actual outage timelines, the outage is deemed to be availed by respective entity.

Requester	Source	Destination	Description *	Outage Type	Reason & Precautions	Approved StartDate	Approved EndDate	Outage StartDate	Outage EndDate	Mail	AvailedStatus
KSEBL	Thiruvananthapuram	Bangalore	Alcatel IP Exchange Channel (E1)	Planned	Annual Maintenance of SDH equipment at Edappon	19-Sep-2023 10:30	19-Sep-2023 11:30				
KSEBL	Thiruvananthapuram	Bangalore	Alcatel IP Exchange Channel (E1)	Planned	Annual Maintenance of SDH equipment at Pallom	19-Sep-2023 14:30	19-Sep-2023 15:30				
KSEBL	Thiruvananthapuram	Kalamassery	Data (Ethernet), Main ICCP Link	Planned	Annual Maintenance of SDH equipment at Edappon	19-Sep-2023 10:30	19-Sep-2023 11:30				
KSEBL	Thiruvananthapuram	Kalamassery	Data (Ethernet), Main ICCP Link	Planned	Annual Maintenance of SDH equipment at Pallom	19-Sep-2023 14:30	19-Sep-2023 15:30				
TANTRANSO	Kalivanthapattu PGCIL	Pugalur Link via Alagapuram	Protection & Data	Emergency	In the existing 400 KV Pugalur SS to 400KV Kalivanthapattu SS OPGW link, splicing work have been planned in all 24 Fibers to make LULO for the new 765 KV Ariyalur SS.						

Figure 28 RPC view for Freezing COD1 Application.

Requester	Description *	Location	Outage Type	Reason & Precautions	Approved StartDate	Approved EndDate	Outage StartDate	Outage EndDate	Mail	AvailedStatus
TSTRANSCO	48 V / 100 A Charger - 2, Make : Chloride Power Systems, Model (1+1)	400 KV Suryapet SS	Planned	Periodical Maintenance Works	15-Sep-2023 11:00	15-Sep-2023 13:00				
TSTRANSCO	48 V / 300 AH BATTERY BANK, MAKE : AMARARAJA, MODEL : VRLA	220 KV Peddagopathi SS	Planned	Periodical Maintenance Works	05-Sep-2023 11:00	05-Sep-2023 14:00				
TSTRANSCO	48 V / 35 A (1+1) Charger, Make : Chloride Power Systems CoD on 13.12.2022 [Formerly Amaraaraja]	KODADA	Planned	Periodical Maintenance Works	04-Sep-2023 11:00	04-Sep-2023 13:00				
TSTRANSCO	48 V / 50 A CHARGER (1+1), MAKE : AMARRAJA, MODEL : FCBC	220 KV Peddagopathi SS	Planned	Periodical Maintenance Works	05-Sep-2023 11:00	05-Sep-2023 14:00				
TSTRANSCO	48 V / 50 A CHARGER, Make : Chloride Power Systems, Model (1+1)	220 KV WARANGAL SS	Planned	Periodical Maintenance Works	05-Sep-2023 11:00	05-Sep-2023 13:00				

Figure 29 RPC view for Freezing COD2 Application

2.13. Rolling Report-- 12 Months Outage Time > 48hours

In order to monitor and highlight excessive outages of any of the communication link/equipment registered in the COMSR Db, Rolling Outage Reports for last twelve (12) months are provided which cumulatively adds the outage duration of communication links/equipment as per COD1/COD2 reports of last 12 months and summarizes the same in COD3 report (for communication links) and COD4 report (for Equipment). COD3 and COD4 reports are available for downloading in excel from the web portal. Sample screen showing download option is shown in Figure 30 and sample report format for COD3 (links) and COD4 (equipment) are shown in Figure 31 and Figure 32 below.

Download 12 Months Rolling Report

Sep. 2023

COD3(Link) COD4(Equipments)

Download Rolling 12 Months Report

Figure 30 Rolling Report - 12 Months Outage Time download option

Annexure - COD3																					
Details of Planned and Forced outages of Communication links, availed during the last 12 rolling months																					
October 2022 to September 2023																					
Details of outage of Communication Links (Point to Point) :																			Dated :		
SL	Name of the owner / User	Description of Link /Channel (64 kbps, 104, PMU, VC, 101) / Voice / Protection circuits / VSAT / Others)	Source Station	Destination Station	Channel Routing	Ownership	Nature of outage Forced (F) / Planned (P)	Duration of Forced / Planned outage availed in " [hh] : mm " format												Deviation (Y/N)	
								October 2022	November 2022	December 2022	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	PGCIL SR 1	Data & Voice	Nellore PS_765kV	Vijayavada PG (DCPC)	Main Path: Nellore PS - Kadappa PG - CK Palli AP - Mudduru RTTP - StandBy: Nellore PS - Kadappa PG - Chitor AP - THVM - Kolai	PGCIL SR 2,PGCILPGIL LSR 1	P													00:00	N
							F													00:00	
							O													00:00	
							Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	
2	PGCIL SR 1	Data & Voice	Nellore PS_765kV	Vijayavada PG (DCPC)	StandBy: Nellore PS - Kadappa PG - Chitor AP - THVM - Kolai	PGCIL SR 2,PGCILPGIL LSR 1	P													00:00	N
							F													00:00	
							O													00:00	
							Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	
3	PGCIL SR 1	Data, Voice & Protection	Vemagiri PS	Vijayavada PG (DCPC)	Main Path: Vemagiri PS - Vijayavada PG2 - Vijayavada PG1	PGCIL SR 2,PGCILPGIL LSR 1	P													00:00	N
							F													00:00	
							O													00:00	
							Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	
4	PGCIL SR 1	Data, Voice & Protection	Vemagiri PS	Vijayavada PG (DCPC)	StandBy: Vemagiri PS - Vemagiri AP - Bommu AP - Bhimadola AP	PGCIL SR 2,PGCILPGIL LSR 1	P													00:00	N
							F													00:00	
							O													00:00	
							Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	
5	PGCIL SR 1	Data & Voice	Warangal PG	Vijayavada PG (DCPC)	Main Path: Warangal PG - Warangal TS - Khammam TS - Khammam PG - StandBy: Warangal PG - Ramgundam MTPG - Rep 346 - Main Path: Kadappa	PGCIL SR 2,PGCILPGIL LSR 1	P													00:00	N
							F													00:00	
							O													00:00	
							Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	
6	PGCIL SR 1	Data & Voice	Warangal PG	Vijayavada PG (DCPC)	StandBy: Warangal PG - Ramgundam MTPG - Rep 346 - Main Path: Kadappa	PGCIL SR 2,PGCILPGIL LSR 1	P													00:00	N
							F													00:00	
							O													00:00	
							Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	

Figure 31 Sample COD3 Links Generated Report

Annexure - COD4																							
Details of Planned and Forced outages of Communication equipments, availed during the last 12 rolling months																							
October 2022 to September 2023																							
Details of outage of Communication equipments :																				Dated	:		
SL	Name of the owner / User	Name of the communication equipments	Location of the Equipment / Name of Station	Ownership	Nature of outage (Forced (F) / Planned (P))	Duration of Forced / Planned outage availed in " [hh] : mm " format													Deviation (Y/N)				
						October 2022	November 2022	December 2022	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	Total					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
1	PGCIL SR 1	Tejas SDH TJ1400 STM16 Vijayawada-2	Vijayawada PG	PGCIL SR 2,PGCIL,PGCIL SR 1	P														00:00	N			
					F													00:00					
					O													00:00					
					Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					
2	PGCIL SR 1	Tejas SDH TJ1400 STM16 Nellore PS-1	Nellore PS_765kV	PGCIL SR 2,PGCIL,PGCIL SR 1	P													00:00	N				
					F													00:00					
					O													00:00					
					Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					
3	PGCIL SR 1	Tejas SDH TJ1400 STM16 Nellore PG-1	Nellore PG_400kv	PGCIL SR 2,PGCIL,PGCIL SR 1	P													00:00	N				
					F													00:00					
					O													00:00					
					Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					
4	PGCIL SR 1	Tejas SDH TJ1400 STM16 Khammam PG-1	Khammam PG	PGCIL SR 2,PGCIL,PGCIL SR 1	P													00:00	N				
					F													00:00					
					O													00:00					
					Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					
5	PGCIL SR 1	Tejas SDH TJ1400 STM16 Warangal PG-1	Warangal PG	PGCIL SR 2,PGCIL,PGCIL SR 1	P													00:00	N				
					F													00:00					
					O													00:00					
					Total	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00					

Figure 32 Sample COD4 Links Generated Report